

REMARKS

Claims 1-5 were pending in the present application. Claims 1, 3 and 5 have been amended. Claims 6-22 have been added. No claims have been cancelled. Therefore Claims 1-22 are pending in the present application. Support for the claim amendments can be found in the specification, the original claims, and the Japanese priority document. Accordingly, Applicants respectfully submit that no new matter has been added.

Based on the above amendments and following remarks, Applicants respectfully request reconsideration of all outstanding rejections.

Objection to the Drawings

The drawings are objected to in the Office Action as failing to meet the requirements of MPEP § 608.02. Applicants respectfully submit that the proposed drawing amendments discussed above are responsive to the objection, and reconsideration of the drawings is requested.

Claim Rejections Under 35 U.S.C. § 103(a)

In the Office Action, claims 1-5 were rejected under 35 U.S.C. § 103 as being unpatentable over Dixon et al. (USP 4,800,461) in view of (USP 4,931,134) granted to Hatkevitz et al. Applicants respectfully submit that the rejection is improper, and that these claims are allowable for the reasons which follow.

In traversing the rejection, Applicants rely on MPEP § 2143, which states that:

[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

It is respectfully submitted that the Office Action does not meet at least the first and third criteria set out in MPEP § 2143.

The References Do Not Suggest All Claim Recitations

Even if the first requirement of MPEP § 2143 had been satisfied in the Office Action (which it has not, as is explained below) the cited references still would not meet the third requirement, which is that “the prior art reference (or references when combined) must teach or suggest all the claim limitations.”

Claim 1 and claim 5 have been amended to clarify that the circuit patterns in the cable section are covered by a soft laminated adhesive, and that the adhesive is the outermost layer of the cable section: “circuit patterns being provided in the cable section, and covered by a soft laminated adhesive, the adhesive being an outermost layer of the cable section” (claim 1) and “the soft laminated adhesive being an outermost layer of the cable section” (claim 5). That is, an outermost layer of the cable section is an adhesive layer. This can clearly be seen from Figure 1 of the present application.

Neither Dixon nor Hatkevitz disclose, teach, or suggest this limitation. The flexible section of Dixon, assumed *arguendo* as being a cable section, has a Kapton insulator 20 and 22 at the outermost layer. (See Dixon, column 3, lines 45-51, and Figure 3.) The adhesive layer 21 and 23 is underneath layers 20 and 22.

The middle section of Hatkevitz, assumed *arguendo* as being a cable section, has the adhesive layers 16 positioned *between* the flexible layers 14, where layers 14 contain electronic circuitry. (See Hatkevitz, column 3, lines 55-61, and Figures 2-5.) Since the Office Action fails to identify a reference that teaches an outermost layer of a cable section being an adhesive, let alone a soft laminated adhesive, the third requirement of MPEP § 2143 has not been met in regard to claim 1, and, as such, a *prima facie* case of obvious is not present. Thus claim 1 and claim 5, as amended, are allowable. Further, claims 2-4 are allowable for at least the reason that the claims depend from claim 1.

The References Fail to Suggest a Motivation to Modify

Not only is the cited art lacking in a recitation of all the elements of claims 1-5, the cited art also does not provide a motivation to modify the references in a manner that is necessary to arrive at Applicants' invention. This is seen by studying the disadvantages of the prior art that the present invention overcomes, which are described at page 1, lines 24 to 35 of

the application. Specifically, because the cover film of the prior art is pasted over the outermost layer in order to insulate and protect the cable, positioning becomes difficult when the cover film is pasted only over the cable section and or the cover film is pasted over the component mount section. This results in the thickness of the flexible printed circuit board including the cover film. It is submitted that each of the references identified in the Office Action suffer from these disadvantages and that the present invention overcomes these disadvantages. Thus, one of ordinary skill would not even look to these references to solve the problems identified in the prior art. Since there is no suggestion to modify the references, the first requirement of MPEP § 2143 has likewise not been met. As such, the rejections are improper for this reason as well.

New Claims

As seen above, Applicants have drafted a new set of claims. It is submitted that these claims are allowable for the pertinent reasons discussed above, and for the following additional reasons.

Claims 6-12

Claim 6 includes the limitation that at least one of the top and bottom of the circuit strata, which extends into the component mount section and the cable section, is covered by a soft laminate adhesive. The circuit strata is defined as a strata which includes *all* the circuit layers of the circuit board, where circuit patterns are provided in at least one of the circuit layers. Dixon shows that the adhesive layer 21 and 23 is only present in the flexible layer and that adhesive layers 21 and 23 do not extend into the rigid section. (See Dixon, column 4, lines 3-7, and Figure 3.) Dixon does this to ensure that “the problems of thermal expansion and moisture retention in the rigid section, which have been encountered in the past with materials such as Kapton and acrylic adhesives, are avoided by the absence of such materials.” (column 4, lines 31-35) Thus, Dixon teaches away from extending an adhesive layer into the rigid section. Therefore, because one of ordinary skill in the art would identify the rigid sections as the location to mount a component to the board of Dixon, Dixon teaches away from an adhesive layer covering a circuit strata in a component mount section, and

would not be seen as combinable with Hatkevitz, which the Office Action relies on to teach a component mount section. Thus, claim 6 is allowable.

Claims 7-12 are allowable for at least the reason that they depend from claim 6. Further, claim 9 is allowable because Dixon teaches away from the use of acrylic in the component mount section. (column 4, lines 31-35)

Claims 13-15

Claim 13 includes the limitation that at least one of the top and bottom of the circuit strata is covered by a soft laminated adhesive where the adhesive is an outermost layer of the cable section. As discussed above in regard to claim 1, neither Dixon nor Hatkevitz disclose, teach, or suggest that an outermost layer of the cable section is an adhesive. Therefore, claim 13 is allowable. Claims 14 and 15 are allowable due at least to their dependency from claim 13.

Claims 16-20

Claim 16 includes the limitation that the circuit strata of the cable section is covered on the top and bottom only by an adhesive, where the circuit strata includes all the circuit layers. As noted above, Dixon teaches a circuit covered by a Kapton layer 20 and 22, thus it is not covered only by an adhesive. Hatkevitz teaches a circuit strata (i.e. a strata including 14a and 14b) that is not covered by an adhesive in the middle section (assumed *arguendo* as the cable section), let alone *only* covered by an adhesive. Therefore, these references are not sufficient to meet the third requirement of MPEP § 2143. Thus, claim 16 and its dependent claims are allowable.

Claims 21-22

Claim 21 covers “a flexible printed circuit board comprising at least one cover layer, the at least one cover layer being located *at the outermost portion of at least one side of the board*, wherein at least one of the at least *one cover layer is an adhesive and not a cover film*.” This claim captures one of the novel characteristics of the present invention, which is that an adhesive is used in place of a cover film. Since neither Dixon nor Hatkevitz disclose,

teach, or suggest using only an adhesive as a cover layer on the outermost portion of at least one side of the board, this claim is allowable.

Conclusion

In light of the above amendments and remarks, Applicants believe that the present application is in condition for allowance. Entry of the present claim revisions and favorable reconsideration are requested.

If Applicants have not accounted for any fees required by this Amendment, the Commissioner is hereby authorized to charge to our Deposit Account No. 19-0741. If applicants have not accounted for a required extension of time under 37 C.F.R. § 1.136, that extension is requested and the corresponding fee should be charged to our Deposit Account.

Examiner Norris is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

Date

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By



Martin L. Cosenza
Registration No. 48,892

FOLEY & LARDNER
Customer Number: 22428
22428

22428

PATENT TRADEMARK OFFICE

Telephone: (202) 672-5571

Facsimile: (202) 672-5399